

ABSTRACT

This invention is directed to the utilization of the developing methods for molecular manipulation of cyanobacteria and red algae (and potentially cryptomonad algae) to express of phycobiliproteins and phycobiliprotein linker fusion proteins and their utilization as phycobiliprotein, phycobilisome and subassembly based reagents. In particular, the present invention relates to a method for a specific binding assay to determine a target moiety which is a member of a specific binding pair, and provides an improvement in the method comprising using a detectable label which is a fusion protein containing both a phycobiliprotein domain and another domain corresponding to a first member of a specific binding pair, where the fusion protein binds to a second member of the specific binding pair to provide a detectable labeled complex. The domain derived from the first member of the specific binding pair can be directly fused to the phycobiliprotein or phycobiliprotein linker domain or be separated by a spacer that allows correct folding of both domains.